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LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A satellite for routing high power amplified (HPA) signals on 0 to n HPA channels to ~~any one of~~ M downlink beams, said satellite comprising:

n first-stage HPA switches each corresponding to one of the 0 to n HPA channels;

M multiplexing devices each to combine a respective set of n/2 HPA channels into one respective output channel;

M second-stage HPA switches each operative to receive outputs from a respective set of said M multiplexing devices; and

M downlink antenna ports coupled to said respective M second-stage HPA switches, such that the n first-stage HPA switches, M multiplexing devices, and the M second-stage HPA switches are configurable to route any combination of the 0 to n HPA channels to any of the M downlink antenna ports.

2. (Currently Amended) The satellite of claim 1, wherein each of said n first-stage HPA switches comprises an M/2 output mechanical switch or set of switches.

3. (Currently Amended) The satellite of claim 1, wherein each of said M second-stage HPA switches comprises a two-output mechanical switch.

4. (Original) The satellite of claim 1, further comprising a receive antenna or a plurality of receive antennas to receive a beam or set of beams each on a channel or set of channels.

5. (Currently Amended) The satellite of claim 4, further comprising means for routing each of a plurality of beams from corresponding ones of said receive antenna or antennas to said n first-stage HPA switches.

6. (Original) The satellite of claim 1, wherein said signals relate to broadband communications.

7. (Currently Amended) The satellite of claim 1, further comprising a control unit to control operation of at least said n first-stage HPA switches and said M second-stage HPA switches such that each signal is routed to provide a desired ~~one of said M downlink antenna ports~~ combination of the 0 to n channels to any of the M downlink antenna ports.

8. (Currently Amended) A satellite mechanism for routing any combination of 0 to n high power amplified (HPA) signals to any ~~one~~ of M downlink beams, said satellite mechanism comprising:

a plurality of first HPA switching devices each operative to route ~~an input~~ a HPA signal to at least one of two switch outputs;

a plurality of multiplexing devices each operative to receive inputs from the at least one of the two switch outputs of a respective set of said plurality of first HPA switching devices and to provide a plurality of output signals; and

a plurality of second HPA switching devices each corresponding to one of said plurality of multiplexing devices and provided to receive said plurality of output signals, ~~each of said plurality of second switching devices~~ the plurality of first HPA switching devices, plurality of multiplexing devices, and the plurality of second HPA switching devices are configurable to route any combination of the 0 to n HPA signals ~~to route a received signal~~ to any ~~one~~ of M antenna ports.

9. (Currently Amended) The satellite mechanism of claim 8, wherein said plurality of first HPA switching devices comprise n first-stage HPA switches each corresponding to one of 0 to n channels, said plurality of multiplexing devices comprises M multiplexing devices each to combine n/2 channels into one output channel, said plurality of HPA second switching devices comprises M second-stage HPA switches to receive outputs from said M multiplexing devices.

10. (Currently Amended) The satellite mechanism of claim 8, wherein said plurality of first HPA switching devices comprises an M/2 output mechanical switch or set of switches.

11. (Currently Amended) The satellite mechanism of claim 8, wherein said plurality of second HPA switching devices ~~comprise~~comprises two-output mechanical switches.

12. (Currently Amended) The satellite mechanism of claim 8, wherein said plurality of second HPA switching devices comprises a three-output switch to route a received signal to one of a test port and a desired antenna port.

13. (Original) The satellite mechanism of claim 8, further comprising a receive antenna or plurality of receive antennas to receive a beam or plurality of beams each on a channel or set of channels.

14. (Currently Amended) The satellite mechanism of claim 13, further comprising means for routing each of said plurality of beams from corresponding ones of said receive antenna or antennas to said plurality of first HPA switching devices.

15. (Original) The satellite mechanism of claim 8, wherein said signals relate to broadband communications.

16. (Currently Amended) The satellite mechanism of claim 8 further comprising a control unit to control operation of at least said plurality of first HPA switching devices, said plurality of multiplexing devices and said plurality of second HPA switching devices.

17. (Currently Amended) A switching mechanism for routing signals from up to n channels to any ~~one~~ of M downlink beams, said switching mechanism comprising:

means for receiving a plurality of uplink signals each corresponding to one of n channels; ~~and~~

means for amplifying the uplink signals to provide a plurality of high powered amplified (HPA) signals; and

means for directing the HPA signals corresponding to each of said uplink signals through n first-stage HPA switches each corresponding to one of 0 to n channels, M multiplexing devices each to combine n/2 channels into one output channel, and M second-stage HPA switches to ~~one of~~ M downlink antenna ports, such that any combination of the 0 to n HPA signals can be directed to any of the M downlink antenna ports.

18. (Cancelled)

19. (Currently Amended) The switching mechanism of claim 18, wherein said n first-stage HPA switches and said M second-stage HPA switches are configured to minimize insertion losses.

20. (Currently Amended) A method of routing signals on a satellite, said method comprising:

receiving signals on 0 to n channels; ~~and~~

amplifying the 0 to n channels to provide 0 to n high power amplified (HPA) signals; and

routing said HPA signals such that any combination of the 0 to n HPA signals can be directed to any ~~one~~ of M downlink antennas.

21. (Currently Amended) The method of claim 20, wherein routing said signals comprises passing said signals through n first-stage HPA switches, using M multiplexing devices each to combine n/2 channels in to one output channel, receiving outputs from said M multiplexing devices at M second-stage HPA switches, and passing said signals through said M second-stage HPA switches.

22. (Currently Amended) A method of routing n signals to ~~any one of~~ M downlink antenna ports on a satellite, said method comprising:

receiving ~~said~~ n signals each corresponding to a different channel;

amplifying the n signals to provide n high powered amplified (HPA) signals; and

directing ~~each of said~~the n HPA signals to any ~~one~~ of said M downlink antenna ports in any combination using n first-stage HPA switches, M multiplexing devices and M second-stage HPA switches.

23. (Currently Amended) The method of claim 22, wherein directing each of said signals comprises passing said HPA signals through said n first-stage HPA switches, using M multiplexing devices each to combine n/2 channels in to one output channel, receiving outputs from said M multiplexing devices at said M second-stage HPA switches, and passing said HPA signals through said M second-stage HPA switches.

24. (New) The satellite of claim 1, further comprising M test ports, each corresponding to a respective one of the M second-stage HPA switches, wherein each of the M second-stage HPA switches is capable of switching a respective output from one of the M multiplexing devices to the corresponding test port to allow access to test the respective HPA signal.

25. (New) The satellite mechanism of claim 8, further comprising a plurality of test ports wherein each of the plurality of second HPA switching devices is capable of switching a respective one of the plurality of output signals to a corresponding one of the test ports to allow access to test the respective HPA signal.